

## Study Guide Final 2009

**This study guide is the 1<sup>st</sup> half of the final study guide. The second half was provided recently as the study guide for the 4<sup>th</sup> quarter Howard County Assessment. The final may include anything that was done during the 2<sup>nd</sup> half of the school year, including labs, homework, drills, and class discussion. The following is a non-inclusive list of items that may be on the final.**

### Energy and Weather

**Concept mastery:** You should be able to,

1. Describe several characteristics of energy.
2. Determine how energy is transferred in different situation.
3. Explain how and why convection currents are started and their effects on weather.
4. Be able to explain several factors that affect insolation and its effect.
5. Explain the energy involved in phase changes and the names of each type of phase change.
6. Show the global wind patterns and the names of the different cells and the regions between each cell.
7. Tell what wind belt we live in.
8. Be able to calculate weather data from psychrometer readings.
9. Explain the relationship between temperature and SVP.
10. Determine the 'comfort factor' (relative humidity) of the moister in the air.
11. Explain the process of cloud formation.

**Terms:** Define or describe the meaning of the following terms.

Energy, conduction, convection, radiation, convection currents, Coriolis Effect, insolation, global winds, Hadley Cells, Trade winds, Prevailing Westerlies, Polar Easterlies, Doldrums, Horse Latitudes, Jet Stream, sea breeze, land breeze, wind direction, phase change, DBT, WBT, WBD, DP, SVP, AVP, RH, GT, CH, sling psychrometer, adiabatic cooling rate.

### Weather

**Terms:** Define or describe the meaning of the following terms.

Isotherm, wind direction, cloud cover, dew point, air pressure, air mass, cyclone, anticyclone, low pressure system, high pressure system, density, warm front, cold front, occluded front, stationary front, polar front, climate, polar/temperate/tropical climates, atmosphere, troposphere, tropopause, stratosphere, stratopause, mesosphere, mesopause, thermosphere, carbon cycle, energy balance, albedo, short wave radiation, long wave radiation, El Niño.

**Concept mastery:** You should be able to,

1. Describe the circulation of air in a cyclone or anticyclone in the northern or southern hemisphere.
2. Describe the movement of air in and out of a cyclone or anticyclone in the northern and the southern hemisphere.

3. Describe the processes of cloud formation or cloud disappearance in a high and low pressure system.

## **Weather (continued)**

4. Describe the development and movement of a weather front and describe the conditions along the warm and cold front.
5. Describe the formation and movement of an occluded front along the polar front.
6. Identify and use the symbols for cold, warm, occluded, and stationary fronts.
7. Describe the general atmospheric conditions for a high pressure system and a low pressure system.
8. Be able to describe the different climate zones and their characteristics.
9. Explain the factors that affect temperature and precipitation.
10. Name the layers of the atmosphere and describe how temperature changes in each layer, as you move away from the earth's surface.
11. Identify the location of the ozone layer and explain the positive effect of ozone.
12. Be able to describe the energy balance of the Earth.
13. Describe the conditions and effects of El Niño.

**Study Materials:** Use the following to help you study.  
SNs, Notes, Worksheets, Labs, Textbook, Homework.

**Items to Bring to the Test:** You should have the following items on the test day.

**3<sup>rd</sup> and 4<sup>th</sup> quarter notebooks**

**Textbook**

Pencil

Eraser and/or whiteout

Blank piece of paper

Calculator

1 well fed and rested body